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| 10/530,219      | 03/31/2005  | Tomohiro Yamada      | OMOR-0010           | 1261             |

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| EXAMINER |
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SHECHTMAN, SEAN P

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2125

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05/14/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                        |  |                     |  |
|------------------------------|------------------------|--|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> |  | <b>Applicant(s)</b> |  |
|                              | 10/530,219             |  | YAMADA ET AL.       |  |
|                              | <b>Examiner</b>        |  | <b>Art Unit</b>     |  |
|                              | Sean P. Shechtman      |  | 2125                |  |

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 April 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4 and 6-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 6-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Claim Objections*

1. Claims 3, 14, 15 is objected to because of the following informalities: Referring to claim 3, lines 7-8, "consisting of" should be "consists of". Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3, 4, 6-15 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The original specification and claims fail to teach that three-dimensional CAD (or XVL) data contains an assembly structure of a product. Applicant submits that three-dimensional CAD (or XVL) data containing an assembly structure of a product is common knowledge among those skilled in the art and therefore does not raise the issue of new matter. The examiner respectfully disagrees since disclosure in an application that merely renders the later-claimed invention obvious is not sufficient to meet the written description requirements of 35 U.S.C 112, first paragraph. *Lockwood, v. American Airlines, Inc.* 41 U.S.P.Q.2d. 1961, 1966 (Fed. Cir. 1997).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3, 4, 6-15 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 1, 3, 4, 6-15 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the reply filed 4/16/07. In that paper, applicant has stated the prior art does not teach that a user defines a parts list (disassembly definition information) from 3-dimensional data (assembly structure information), and this statement indicates that the invention is different from what is defined in the claim(s) because the claims recite the parts list being a list of parts or partially assembled parts of the product and being defined by a user independently from the assembly structure information.

4. Claims 14, 15, are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Referring to claim 14, 15, line 6, "consisting the product" is unclear. It is unclear how a list of parts of a product can have a list of partially assembled parts consisting of the product. For purposes of examination, it will be assumed claims 14, 15, parallel the preamble of claim 1 in regard to this limitation.

***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 14, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1152362 to Maeda (hereinafter referred to as Maeda).

Referring to claims 1, 14, 15, Maeda teaches a method/computer/system/instruction means stored in said storage medium for generating a parts catalog of a product from three

dimensional data and a parts list of the product, wherein the parts catalog comprises the parts list and a disassembled illustration of the product; said three dimensional data comprising assembly structure information of the product; and the parts list being a list of parts or partially assembled parts of the product and being defined by a user independently from the assembly structure information (Fig. 10, Cols. 22-23, paragraph 131);

the method comprising the steps of: assigning a reference numeral/ symbol to said parts and partially assembled parts in the parts list (See Fig. 10), building a disassembly algorithm based on said parts list (Col. 22, paragraph 130); and generating disassembly illustrations based on said disassembly algorithm (Fig. 10, element 1461), wherein maximal disassembled states in the disassembly illustrations are the parts and partially assembled parts assigned with said reference numeral/symbols, and displaying said reference numeral/symbol for each of the parts and partially assembled parts in the disassembly illustrations (See Fig. 10, element 1461).

6. Claims 1, 3, 4, 7-10, 14, 15 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1288868 to Kawai (hereinafter referred to as Kawai).

Referring to claims 1, 14, 15, Kawai teaches a method/computer/system/instruction means stored in said storage medium for generating a parts catalog of a product from three dimensional data and a parts list of the product, wherein the parts catalog comprises the parts list and a disassembled illustration of the product; said three dimensional data comprising assembly structure information of the product; and the parts list being a list of parts or partially assembled parts of the product and being defined by a user independently from the assembly structure information (whole document);

the method comprising the steps of: assigning a reference numeral/ symbol to said parts and partially assembled parts in the parts list (Col. 8, lines 27-31, Fig. 2, the drawing is based on the assembly construction data, Fig. 3), building a disassembly algorithm based on said parts list (Fig. 10; Col. 6, lines 4-43); and generating disassembly illustrations based on said disassembly algorithm (See Figs. 8-9), wherein maximal disassembled states in the disassembly illustrations are the parts and partially assembled parts assigned with said reference numeral/symbols (Col. 6, lines 4-43, lowest level; Col. 6, lines 4-43, first level is not the lowest level), and displaying said reference numeral/symbol for each of the parts and partially assembled parts in the disassembly illustrations (See Figs. 8-9).

3. The method of claim 1, wherein the parts list includes disassembly definition information comprising a tree structure consisting of a nodes and leave, which are processes and parts, respectively, wherein the node comprises a basic process (Fig. 3, Col. 5, lines 8-21). Language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation (MPEP 2106 [R-5]).

4. The method of claim 3, wherein said step (b) generates the disassembly algorithm by adding to the parts list, a moving coordinate system of said basic process, and a respective moving position of the parts within said moving coordinate system, that are determined based on the disassembly definition information of said parts list (Col. 6, lines 44-58; Fig. 8).

7, 8. The method of claim 1, further comprising the step of (d) modifying the disassembly algorithm and illustrations after generating the disassembly illustrations; wherein said step (d)

modifies each of the disassembly illustrations by modifying a position, a bearing or a scale of each of the parts (Fig. 8-9; Col. 6, line 4 – Col. 7, line 1).

9. The method of claim 8, wherein said step (d) generates and presents a user interface for modifying the position, bearing or scale for each of the parts or parts groups (Figs. 2-9).

10. The method of claim 8, wherein said step (d) permits modification of a camera view point information to modify the disassembly illustration (Col. 6, line 43 – Col. 7, line 1).

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai as applied to claims 1, 3, 4, 7-10, 14, 15 above, and further in view of U.S. Pat. No. 5,619,630 to Minami et al (hereinafter referred to as Minami).

Referring to claim 6, Kawai teaches all of the limitations set forth above however fails to teach a shape of each of the parts or parts groups is approximated with a circumscribing polygon thereof, and the moving position is set such that each polygon is at a minimum distance from each other which is greater than a predetermined ratio.

However, Minami teaches analogous art wherein a shape of each of the parts or parts groups is approximated with a circumscribing polygon thereof, and the moving position is set such that each polygon is at a minimum distance from each other which is greater than a predetermined ratio (Col. 42, line 30 – Col. 43, line 15).

Kawai and Minami are analogous art because they are from the same field of endeavor, producing an exploded view of parts/products.

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Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teachings of Kawai with the teachings of Minami.

One of ordinary skill in the art would have been motivated to combine these references because Minami teaches the manpower for producing an exploded view can be decreased by eliminating the operator's conventional work to move parts by individually specifying a moving direction and a moving amount for each part (Col. 3, lines 26-30).

8. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai as applied to claims 1, 3, 4, 7-10, 14, 15 above, and further in view of JP 2003-006245 to Aragaki (hereinafter referred to as Aragaki), supplied by applicant.

Referring to claims 11-12, Kawai teaches all of the limitations set forth above however fails to teach modifying the disassembly illustration by determining an interference among the parts during the movements thereof and by modifying the position, bearing or scale for each of the parts or parts groups in the processes; wherein said interference among the parts or parts groups during the movements thereof is determined by calculating the interference among respective polygons circumscribed around each of the parts or parts groups.

However, Aragaki teaches analogous art comprising: modifying the disassembly illustration by determining an interference among the parts or parts groups during the movements thereof for each of the basic, intermediate and the connecting processes, wherein the basic, intermediate and connecting processes constitute the disassembly definition information, and by modifying the position, bearing or scale for each of the parts or parts groups in the processes; wherein said interference among the parts or parts groups during the movements thereof is



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determined by calculating the interference among respective polygons circumscribed around each of the parts or parts groups (whole document; see also the international search report of the instant application).

Kawai and Aragaki are analogous art because they are from the same field of endeavor, shape processing.

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teachings of Kawai with the teachings of Aragaki.

One of ordinary skill in the art would have been motivated to combine these references because Aragaki teaches a shape processor which can automatically create a plan in the state of decomposition (Abstract). Furthermore, Aragaki teaches detecting interference between modeled parts during movement and moving the modeled parts to avoid the interference (Abstract).

9. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kawai as applied to claims 1, 3, 4, 7-10, 14, 15 above, and further in view of "Automatic Arrangement of Meta-Objects in Assembly Illustrations" to Katsuma (hereinafter referred to as Katsuma), supplied by applicant.

Referring to claim 13, Kawai teaches all of the limitations set forth above however fails to teach the step of drawing a lead line from each of parts and parts groups within the disassembly illustration in order to display said reference numeral/symbol, wherein said step of drawing a lead line projects a movement vector from a pre-disassembly position to a post-disassembly position for said parts and parts groups, onto a plane perpendicular to a view point

vector from a view point, and draws said lead line for said reference numeral/symbol from a post-movement object along an axis direction of a shorter component of analyzed vector components constituting such a projected vector.

However, Katsuma teaches analogous art comprising: the step of drawing a lead line from each of parts and parts groups within the disassembly illustration in order to display said reference numeral/symbol, wherein said step of drawing a lead line projects a movement vector from a pre-disassembly position to a post-disassembly position for said parts and parts groups, onto a plane perpendicular to a view point vector from a view point, and draws said lead line for said reference numeral/symbol from a post-movement object along an axis direction of a shorter component of analyzed vector components constituting such a projected vector (whole document; see also the international search report of the instant application).

Kawai and Katsuma are analogous art because they are from the same field of endeavor, assembly illustrations.

Therefore it would have been obvious to one of ordinary skill in the art at the time that the invention was made to modify the teachings of Kawai with the teachings of Katsuma.

One of ordinary skill in the art would have been motivated to draw a lead line, as taught by Katsuma, to link or associate non-graphic information with a graphic entity, thereby increasing the modeling accuracy.

#### ***Response to Arguments***

10. Applicant's arguments filed 4/16/07 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a user defines a parts list (disassembly definition information) from 3-dimensional data (assembly structure information); the creation of process trees (disassembly definition information) in which a user defines the order and direction of disassembling/assembling among other things) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

### ***Conclusion***

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean P. Shechtman whose telephone number is (571) 272-3754. The examiner can normally be reached on 9:30am-6:00pm, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo P. Picard can be reached on (571) 272-3749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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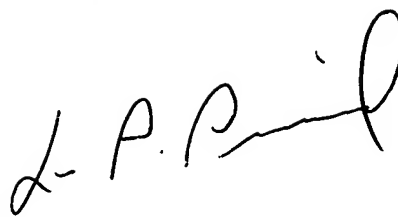
Sean P. Shechtman

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May 4, 2007

A handwritten signature in black ink, appearing to read "L. A. Picard". The signature is fluid and cursive, with a large loop at the end.

LEO PICARD  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100